

Appl. No. 10/748,075
Reply to Non-Final Office Action of August 3, 2006

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REMARKS

Claims 1-20 are pending in the present application. Claims 1, 7 and 14 are amended. Reconsideration of this application is respectfully requested.

Claim rejections under 35 U.S.C. §101

The Action rejected Claims 1, 7 and 14 under 35 U.S.C. §101 as being directed to non-statutory subject matter.

Claims 1, 7 and 14 have been amended to recite repairing the opaque defect according to the repair formula. Applicants submit that Claims 1, 7 and 14 include the step of repairing the opaque defect and are, therefore, used in a practical application. Withdrawal of the rejections is respectfully requested.

Claim rejections under 35 U.S.C. §102(b)

The Action rejected Claims 1-3, 6-8, 11-14 and 18-20 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,322,935 to Smith ("Smith").

Claim 1 recites "identifying an opaque defect based on a difference between its light reflection rate and a reference reflection rate; determining a residue height of the opaque defect based on a light transmission rate; devising a repair formula based on the determined residue height for eliminating the opaque defect; . . ." (Emphasis added). Applicants submit that Smith fails to teach or suggest the claimed features in view of the following reasons.

Smith is directed to a method for repairing phase shift defects in a phase shift mask. Smith locates a defect in a phase shift mask and uses an **atomic force microscope (AFM)** to analyze the defect for producing **three-dimensional representations** of the defect. Smith then uses an actinic radiation beam to remove the defect based on the "three-dimensional representations" of the defect. Nothing in the description or drawings of Smith discloses or suggests identifying an opaque defect based on a difference between its light reflection rate and a reference reflection rate; determining a residue height of the opaque defect based on a light

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transmission rate; and devising a repair formula based on the determined residue height for eliminating the opaque defect.

Even if Smith's AFM were to include a microscale cantilever and a sensor to receive laser light reflected from the cantilever, Smith's AFM would only be measuring light reflected from the AFM cantilever. Smith's AFM would not operate based on a light reflection rate of the defect. Nor does an AFM operate based on a light transmission rate.

Accordingly, Claim 1 is not anticipated by Smith and is, therefore, allowable for at least the reason set forth above.

Claims 2, 3 and 6 depend from Claim 1 and are, therefore, allowable for at least the reason set forth above in connection with Claim 1.

Claim 7 recites "identifying at least one opaque defect . . . based on a difference between its light reflection and a reference reflection rate; determining a residue height of the opaque defect based on its light transmission rate; devising a repair formula based on the determined residue height; and . . ." (Emphasis added). As the reasons argued above analogous to Claim 1, Claim 7 is not anticipated by Smith and is, therefore, allowable over the art of record.

Claims 8, 11 and 12 depend from Claim 7 and are also allowable over the art of record for the reason set forth above in connection with Claim 7.

Claim 14 recites that "at least one opaque defect . . . based on a difference between its light reflection and the reference reflection rate; determining a residue height of the opaque defect based on its light transmission rate; devising a repair formula based on the determined residue height; and . . ." (Emphasis added). As the reason argued above analogous to Claim 1, Claim 14 is not anticipated by Smith and is, therefore, allowable over the art of record.

Claims 18-20 depend from Claim 14 and are, therefore, allowable for at least the reason set forth above in connection with Claim 14.

Reconsideration and withdrawal of the §102(b) rejections are respectfully requested.

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Claim rejections under 35 U.S.C. §103(a)

The Action also rejected Claims 4, 5, 9, 10, 15 – 17 under 35 U.S.C. §103(a) as being unpatentable over Smith in view of U.S. Patent No. 5,804,813 to Wang et al. (“Wang”).

Claims 4 and 5 depend from Claim 1. Since Smith fails to disclose or suggest the claimed features recited in Claim 1, Applicants submit that Claims 4 and 5 are not obvious over the art of record and are, therefore, allowable for at least the reason set forth above in connection with Claim 1.

Claims 9, 10 and 15 – 17 depend from Claims 7 and 14, respectively, and are, therefore, allowable over the art of record for at least the reason set forth above in connection with Claims 7 and 14, respectively.

Reconsideration and withdrawal of the §103(a) rejections are respectfully requested.

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Conclusion

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Early notification to that effect is respectfully requested.

The Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment that may be associated with this communication to deposit account 04-1679.

Respectfully submitted,

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